



Uncertainties in measuring populations potentially impacted by sea level rise and coastal flooding

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Year: 2012
Journal: PLoS One. 7 (10): e48191

Abstract:

A better understanding of the impact of global climate change requires information on the locations and characteristics of populations affected. For instance, with global sea level predicted to rise and coastal flooding set to become more frequent and intense, high-resolution spatial population datasets are increasingly being used to estimate the size of vulnerable coastal populations. Many previous studies have undertaken this by quantifying the size of populations residing in low elevation coastal zones using one of two global spatial population datasets available - LandScan and the Global Rural Urban Mapping Project (GRUMP). This has been undertaken without consideration of the effects of this choice, which are a function of the quality of input datasets and differences in methods used to construct each spatial population dataset. Here we calculate estimated low elevation coastal zone resident population sizes from LandScan and GRUMP using previously adopted approaches, and quantify the absolute and relative differences achieved through switching datasets. Our findings suggest that the choice of one particular dataset over another can translate to a difference of more than 7.5 million vulnerable people for countries with extensive coastal populations, such as Indonesia and Japan. Our findings also show variations in estimates of proportions of national populations at risk range from

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3480473>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Sea Level Rise

Extreme Weather Event: Flooding

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location:

resource focuses on specific location

Global or Unspecified

Climate Change and Human Health Literature Portal

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Resource Type:

format or standard characteristic of resource

Research Article, Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content